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a name unconditionally preoccupied. *Rhus hirta* (L.), to be legitimately written only for our Sumach, has never been proposed, and is not a synonym in fact—*Rhus hirta* (Harv. Mss. in Herb. Kew), Engler, l. c. is.

Moreover, in maintaining *Rhus hirta* (L.) for the Staghorn Sumach, we follow the ornithologists' interpretation of "Once a synonym always a synonym."

I should, therefore, propose that *Rhus typhina*, L. (1760) be replaced by *Rhus hirta* (L.) (=*Datisca hirta*, L., 1753), not *Rhus hirta* (Harv. Mss. in Herb. Kew), Engler (1883).

GEO. B. SUDWORTH.

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[Mr. Sudworth's notes touch on the question of what importance is to be placed on the publication of a name as a synonym. His first-mentioned species appears to have been first alluded to in print by Torrey and Gray (Fl. N. A. i. 217, 1838), where it was doubtfully referred to the European *R. Cotinus*, L., and "*R. cotinoides*, Nutt. in herb. acad. Phila.," printed as a synonym. The appearance of this name dates then from 1838, and we fail to see any reason why it should not be maintained. It is quite equivalent to an author publishing two names for a plant, the first of which is preoccupied. His second case is similar, but not identical. *Rhus tridentata*, Sond., should in my view not stand, on account of the earlier publication of *Rhus tridentata*, Thunb., which would bring in *R. hirta*, Harv., for *R. tridentata*, Sond. —N. L. B.]

Notes on Peronosporaceæ.

The following list of Peronosporaceæ includes species found in the vicinity of Brookings, S. D., during the summer of 1891. The region covered is that included within a radius of five miles from the city. Specimens of all the species have been collected upon the college farm, also, which lies close to the city and is situated upon prairie uplands.

PERONOSPORA ARTHURI, Farlow.

This species was very plentiful during July on *Œnothera biennis*. Plants growing in the wild flower garden suffered most. Many plants were entirely stripped of their leaves.

Septoria Œnotheræ often occurred in company with the mildew and together they did much damage. *Œnothera Missouriensis* growing in the garden was somewhat affected by the mildew.

PERONOSPORA CYPARISSIÆ, DeBary.

The mildew of our spurges seems to belong to this species rather than to *P. Euphorbiæ.* All my specimens agree with DeBary's description. The fungus grew plentifully on *Euphorbia glyptosperma* and *E. maculata.* It appears on the under side of the leaves, petioles and branches, and is most plentiful on the central branches, causing them to assume an upright mode of growth. It has aided very materially in checking the growth of these weeds.

PERONOSPORA EFFUSA (Grev.), Rabenh.

Very plentiful on spinach (*Spinacea oleracea*) and goosefoot (*Chenopodium album* and *C. hybridum*). It has been very destructive to all hosts and especially so to spinach. All of these plants grown in the college gardens were so badly affected as to be hardly fit for any use at all, and were destroyed long before the season was over. It was often associated with a "leaf-spot" fungus (*Stegonospora Spinaceæ,* E. & E. n. sp. in litt,) which bids fair to become a serious pest.

PERONOSPORA LEPTOSPERMA, DeBary.

Common on *Artemisia biennis* during June and early July. It was usually destructive to the affected leaves, but did little injury to the plant as a whole.

PERONOSPORA PARASITICA (Pers.), DeB.

This species has done good service in killing off many of the crucifers of weedy habits. It has been very plentiful. The plants found in this vicinity affected by it are: *Brassica nigra, B. alba, B. Sinapistrum, Sisymbrium canescens, Lepidium intermedium, L. Virginicum, L. sativum, Capsella Bursa-pastoris, Nasturtium hispidum, N. Armoracia* and *Raphanus sativus.* The damage done to the two last hosts was slight, however, so the mildew has been decidely beneficial.

PERONOSPORA VIOLÆ, DeB.

Quite plentiful on pansies (*Viola tricolor*) in flower gardens during the latter part of August and early part of September. Very injurious.

SCLEROSPORA GRAMINICOLA (Sacc.) Schroet.

This fungus has been plentiful on *Setaria viridis*, often in company with *Pericularia grisea* (Cke.), Sacc. It did much damage to that weed and thus did good work for the farmers.

PLASMOPARA HALSTEDII (Farl.), Ber. & DeT.

Probably the most destructive mildew in this locality. It was collected in abundance on *Helianthus tuberosus* and *Iva xanthiifolia*. On the former host it was often found completely covering the under side of every leaf of the plant, which it usually killed. It was most plentiful on this host during a rather wet spell of weather in early July. On *Iva* it seldom covered the entire plant, but was abundant enough on the lower leaves to cause them to fall off and do serious injury to the plant. This species of *Iva* is very plentiful around Brookings, yet I was unable to find a single unaffected patch of it during July and early August.

PLASMOPARA PYGMÆA (Ung.), Schroet.

Early in June a small amount of this species was found on an undetermined species of *Anemone*, but was not found again. Though occurring in but a limited area it was quite injurious to the host.

CYSTOPUS BLITI (Biv.), DeBary.

Very plentiful from June to September on *Amarantus albus*, *A. retroflexus* and *A. blitoides*. It injured the leaves considerably, but did not seem to affect the "seed-bearing" of the plant very much. It remains later than any other species that I have observed.

CYSTOPUS CANDIDUS (Pers.), Lev.

During the season this species has been collected on *Brassica nigra*, *B alba*, *Lepidium Virginicum*, *L. intermedium*, *Nasturtium Armoracia*, *N. hispidum*, *Sisymbrium officinale*, *Capsella Bursa-pastoris* and *Lepidium sativum*. It was quite injurious in many cases, especially on horseradish, where, in connection with *Ramularia Armoraciæ*, it did much damage.

CYSTOPUS TRAGOPOGONIS (Pers.), Schroet.

By far the most destructive species in this genus. Entire patches of *Ambrosia artemisiæfolia* and *A. psilostachya* were so badly injured by it as to ripen but little or no seed. Even along the dry, dusty streets of the city this was true. Though the fungus was found in June and early July it did not become so destructive until the dry weather of the latter part of July and August.

A few specimens of a *Cystopus* probably belonging to this species was found on *Artemisia biennis*, usually associated with *Peronospora leptosperma*, DeB. It was not very injurious on this plant however, and never occurred in any quantity.

The rainfall for the summer months of the years 1890 and 1891 was as follows:

1890.	in.	1891.	in.
June - - -	7. 91	June - - -	4. 09
July - - - -	1. 54	July - - - -	2. 01
August - - -	2. 07	August - - -	1. 38

During the two years preceding 1890 the amount of rainfall was much less, being but 5.53 in. for the whole three months in 1888, and 5. 03 in. in 1889. During the past summer there were several heavy rains in June, and they were distributed in such a way as to keep up a tolerably luxuriant vegetation throughout the month. The mildews and white rusts were plentiful at this time, but apparently did but little damage. The greatest amount of injury was done during the dry weather of July and August. The fungi had then a good hold on the host plants, many of which were not able to withstand both dry weather and fungous injuries.

On the whole the observations of the season have shown a greater abundance of these fungi here than one would naturally expect to find in so dry a climate. The number of species, while not large, is surprising, and the abundance of each species is very much more so. Another noticeable feature is the injuriousness of such a great majority of the species found.

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Parasitic Fungi as Related to Variegated Plants.*

BY BYRON D. HALSTED.

During the past two years a large number of variegated plants have been examined with reference to the presence of parasitic fungi. Attention was first called to the subject by a study of the foliage of a variegated ash, which had its leaves

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* Abstract of paper before Torrey Botanical Club, February 9th, 1892.